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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/786,502      | 02/24/2004  | Adnan Shennib        | 022176-000210US     | 4013             |

20350 7590 01/03/2008  
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| EXAMINER |
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PENDLETON, DIONNE

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| ART UNIT | PAPER NUMBER |
|----------|--------------|

2627

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| MAIL DATE | DELIVERY MODE |
|-----------|---------------|

01/03/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/786,502

Applicant(s)

SHENNIB ET AL.

Examiner

Dionne H. Pendleton

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 104-126, 128 and 130 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 104-126, 128 and 130 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim **104-126, 128 and 130** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kelsey (US 2,430,229)** in view of **Ward (U.S. 5,201,007)**.

#### **Regarding claim 104,**

in **figure 1**, KELSEY teaches a tubular insert for insertion into an ear canal of a wearer, said tubular insert, comprising: a radially flexible, substantially axially rigid sound conduction tube ("**10**" in **figure 1**) constructed and adapted for removable connection to a receiver section of a main module (**column 3:27-30**);

a first concentric acoustic seal ("**25**" in **figure 1**) projecting radially from the sound conduction tube **10** for flexibly engaging the bony part of the ear canal in a sealing manner and forming a first confined space (**Column 3:68-70**) between the first acoustic seal and tympanic membrane; and

a second concentric acoustic seal ("**24**" in **figure 1**) projecting from the sound tube **10** and forming a second confined space between the first concentric acoustic seal and the second concentric acoustic seal (**Column 3:68-70**).

Kelsey fails to teach a small pressure vent extending through the first concentric seal and also that the second seal has a relatively larger occlusion relief vent extending there through providing an attenuation of sound frequencies between 125Hz and 4000Hz.

WARD teaches the provision of multiple vents of varying sizes for use in conjunction with a tubular insert of a hearing device. Specifically, in **Figure 6**, Ward teaches that a first seal may include a small pressure vent **76** (as shown in **figure 5A**);

and further teaches that a second seal may be constructed so as to include a larger occlusion relief vent **85** extending there through, also see **column 6, lines 56-60**. Additionally, in **column 6:20-35**, Ward provides a means wherein the vent operates to attenuate frequencies greater than about 2700HZ, thus corresponding to the limitation, "providing an attenuation of sound frequencies between 125Hz and 4000Hz".

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Kelsey and Ward, altering the first **(25)** and second **(24)** seals of Kelsey such that they include a venting aperture and larger occlusion relief aperture, respectively, for the purpose of providing an improved fit within the ear canal having means for reducing the occurrence of feedback.

**Regarding claim 105,**

Kelsey teaches a sound conduction tube which may be selectively replaced.

**Regarding claim 106,**

in **column 5, lines 9-10**, Ward teaches that the sound tube may be rigid or semi-rigid so that the tube may be inserted into the ear canal and retain its shape, thereby reading on “kink-resistance and non-collapse”, as claimed.

**Regarding claim 107,**

In **column 6, lines 64-65**, Ward teaches that the device, comprising the sound conduction tube, may have generic configurations and sizes to accommodate a variety of ear canal sized and shapes.

**Regarding claim 108,**

in **figure 7**, Ward teaches that the sound conduction tubing comprises multiple tubing **60,82** for multiple channel sound conducting or venting via plurality of channels **85**.

**Regarding claim 109,**

in **column 5, lines 34-36**, Ward teaches that the tip of the sound conduction tubing is 2-8 mm. Therefore Ward teaches that when said tip is 8mm, the tubing, which has a greater length than that of the tip, is at least 8mm in length.

**Regarding claim 110,**

The combination of Kelsey and Ward fails to explicitly teach that the sound conduction tube has an inside diameter not greater than 2mm.

However, it is well known in the art and would have been obvious to use a tube having an inner diameter not greater than 2mm, since the resultant tube is smaller in area, and yet provides sufficient sound level output.

**Regarding claim 111,**

Ward teaches that the sound conduction tube **60**, which includes seal member **70** with vent holes **76**, is constructed such that audio feedback in the high frequencies is prevented, see **column 6, lines 32-35**, thereby reading on “provide a boost for conducted sounds at the high range of audiometric frequencies.”

**Regarding claim 112,**

Ward teaches that the first concentric seal **70** includes a pressure vent **76** in the form of a hole not greater than 0.5mm (see **column 6, lines 31-32**).

**Regarding claim 113,**

Ward teaches that the pressure vent **76** is directly on the first concentric seal **70**.

**Regarding claim 114,**

Ward teaches that the pressure vent **76** is indirectly incorporated along said sound conduction tube **60**.

**Regarding claim 115,**

in **figure 5B and 5D and 5E**, Ward teaches that the sound conduction tube extends medially past the first seal **70**.

**Regarding claim 116,**

as shown in **figures 5C**, Ward teaches that the seal is hollow of cylindrical shape.

**Regarding claim 117,**

Ward teaches that the seals are flanged (**figure 5A**), mushroom shaped (**figure 5E**) or clustered (**figure 7**), as broadly claimed.

**Regarding claim 118,**

Ward teaches that the cross-sectional perimeter of said seal is circular, elliptical or oval, as shown in **figures 5A, 5F and figure 7**.

**Regarding claim 119,**

Ward teaches, in **column 5, lines 32-36**, that the seals have a span of at least 2mm.

**Regarding claim 120,**

in **column 5, lines 37-39**, Ward teaches the use of materials suitable for use in human body cavities, reading on "antibacterial and anti-microbial".

**Regarding claim 121,**

The combination of Kelsey and Ward fails to explicitly teach that the seals comprise lubricant to facilitate insertion and removal of the tubular insert into and from the ear canal. However, it is well known in the art that ear canals typically contain perspiration and/or earwax, both lubricants. Therefore, Kelsey and Ward each inherently teach a lubricant, for facilitating insertion and removal of the tubular insert into and from the ear canal, as claimed.

**Regarding claim 122,**

in **column 3:28-30**, Kelsey teaches means for removably connecting **45** the sound conduction tube to said receiver section.

**Regarding claim 123,**

Kelsey teaches that the connecting means comprises one of a snap-on, threaded, spring-loaded, pressure-fit, or side-slide mating mechanism.

**Regarding claim 124,**

Kelsey teaches a tube connector **17** for coaxial connection of the tubular insert **(10)** and receiver section **(15)**.

**Regarding claim 125,**

Ward teaches that the apparatus is for amplifying sound to the ear, reading on "for hearing enhancement of a hearing impaired wearer".

**Regarding claim 126,**

Ward teaches that the sound tube is for connection to a hearing aid **90**, reading on "adapting said tubular insert for audio communications" as broadly claimed.

**Regarding claim 128,**

in **figure 1**, KELSEY teaches a tubular insert for insertion into an ear canal of a wearer, said tubular insert, comprising: a sound conduction tube **(10)** constructed and adapted for removable connection to a receiver section **(15)** of a hearing device; at least one appendage ("**25**" in **figure 1**) on the sound conduction tube **(10)** for establishing an acoustically sealed space (**Column 3:68-70**) at the bony area of the ear canal;

and another appendage ("**24**" in **figure 1**) on the sound tube **10** to acoustically seal in the cartilaginous area of the ear canal between the first concentric acoustic seal and the second concentric acoustic seal (**Column 3:68-70**).

Kelsey fails to teach that the another appendage includes means for directing occlusion sounds away from the tympanic membrane.

WARD teaches the provision of multiple vents of varying sizes for use in conjunction with a tubular insert of a hearing device. Specifically, Ward teaches that a seal may be constructed so as to include an occlusion relief vent **85** extending there through, also see **column 6, lines 56-60**. It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Kelsey and Ward, altering the first **(25)** and second **(24)** seals of Kelsey such that they include a venting aperture and larger occlusion relief aperture, respectively, for the purpose of providing an improved fit within the ear canal having means for reducing the occurrence of feedback.

**Regarding claim 130,**

KELSEY teaches an ear canal sound conduction tube **(10)** comprising a tube portion for connection to a main module **(15)** of the hearing device when said main module is at least partially inserted into the ear canal of a user in proximity to the eardrum; and means **25** operatively associated with the tube portion **10** for delivering sounds to an acoustically sealed space about the eardrum;

And means **24** operatively associated with the tube portion **10** for acoustically sealing the cartilaginous area of the ear canal **(Column 3:68-70)**.

Kelsey fails to teach means for directing occlusion sounds away from the eardrum.

WARD teaches the provision of multiple vents of varying sizes for use in conjunction with a tubular insert of a hearing device. Specifically, Ward teaches that a

first seal may include a small pressure vent **76** (as shown in **figure 5A**), and further that a second seal may be constructed so as to include an occlusion relief vent **85** extending there through, also see **column 6, lines 56-60**.

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Kelsey and Ward, altering the first **(25)** and second **(24)** seals of Kelsey such that they include a venting aperture and larger occlusion relief aperture, respectively, for the purpose of providing an improved fit within the ear canal having means for reducing the occurrence of feedback.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims addressed in the Official Action mailed 7/3/2007 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne H. Pendleton whose telephone number is 571-272-7497. The examiner can normally be reached on 10:30-7:00 M-F.

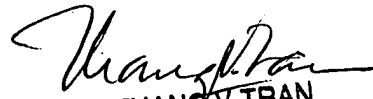
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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D. Pendleton

  
THANG V. TRAN  
PRIMARY EXAMINER